SEQUENCE LISTING

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<110>  Advisys, Inc.

<120>  Codon optimized Synthetic Plasmid

<130>  108328.00146

<160>  21

<170>  PatentIn version 3.1

<210>  1
<211>  3534
<212>  DNA
<213>  artificial sequence

<220>
<223>  Plasmid vector having an analog GHRH sequence.

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gtgaggaatg gtggggagtt attttttagag cggtgaggaa ggtgggcagg cagcaggtgt    180

tggcgctcta aaataactc ccgggagtta tttttagagc ggaggaatgg tggacaccca      240

aatatggcga cggttcctca cccgtcgcca tatttgggtg tccgccctcg gccggggccg     300

cattcctggg ggccgggcgg tgctcccgcc cgcctcgata aaaggctccg gggccggcgg     360

cggcccacga gctacccgga ggagcgggag gcgccaagct ctagaactag tggatcccaa     420

ggcccaactc cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggtgct     480

ctgggtgttc ttctttgtga tcctcaccct cagcaacagc tcccactgct ccccacctcc     540

cccctttgacc ctcaggatgc ggcggcacgt agatgccatc ttcaccaaca gctaccggaa    600

ggtgctggcc cagctgtccg cccgcaagct gctccaggac atcctgaaca ggcagcaggg     660

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tctataatat tatggggtgg aggggggtgg tatggagcaa ggggcaagtt gggaagacaa      900

cctgtagggc ctgcggggtc tattgggaac caagctggag tgcagtggca caatcttggc      960

tcactgcaat ctccgcctcc tgggttcaag cgattctcct gcctcagcct cccgagttgt     1020
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ggcctcccaa attgctggga ttacaggcgt gaaccactgc tcccttccct gtccttctga   1200

ttttaaaata actataccag caggaggacg tccagacaca gcataggcta cctggccatg   1260

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accgtaaaaa ggccgcgttg ctggcgtttt tccataggct ccgcccccct gacgagcatc   1860

acaaaaatcg acgctcaagt cagaggtggc gaaacccgac aggactataa agataccagg   1920

cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc gaccctgccg cttaccggat   1980

acctgtccgc ctttctccct tcgggaagcg tggcgctttc tcatagctca cgctgtaggt   2040

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agcccgaccg ctgcgcctta tccggtaact atcgtcttga gtccaacccg gtaagacacg   2160

acttatcgcc actggcagca gccactggta acaggattag cagagcgagg tatgtaggcg   2220

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gcacgaggaa gcggtcagcc cattcgccgc caagctcttc agcaatatca cgggtagcca   2580

acgctatgtc ctgatagcgg tccgccacac ccagccggcc acagtcgatg aatccagaaa   2640

agcggccatt ttccaccatg atattcggca agcaggcatc gccatgggtc acgacgagat   2700
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cctcgccgtc gggcatgcgc gccttgagcc tggcgaacag ttcggctggc gcgagcccct    2760

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cctgcgctga cagccggaac acggcggcat cagagcagcc gattgtctgt tgtgcccagt    3180

catagccgaa tagcctctcc acccaagcgg ccggagaacc tgcgtgcaat ccatcttgtt    3240

caatcatgcg aaacgatcct catcctgtct cttgatcaga tcttgatccc ctgcgccatc    3300

agatccttgg cggcaagaaa gccatccagt ttactttgca gggcttccca accttaccag    3360

agggcgcccc agctggcaat tccggttcgc ttgctgtcca taaaaccgcc cagtctagca    3420

actgttggga agggcgatcg gtgcgggcct cttcgctatt acgccagctg gcgaaggggg    3480

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<210>    2
<211>    2739
<212>    DNA
<213>    artificial sequence

<220>
<223>    Plasmid vector having an analog GHRH sequence.

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gttggcgctc taaaaataac tcccgggagt tatttttaga gcggaggaat ggtggacacc     180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc     240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc     300

ggcggcccac gagctacccg gaggagcggg aggcgccaag cggatcccaa ggcccaactc     360

cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggtgct ctgggtgttc     420

ttctttgtga tcctcaccct cagcaacagc tcccactgct ccccacctcc ccctttgacc     480
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ctcaggatgc ggcggtatgc agatgccatc ttcaccaaca gctaccggaa ggtgctgggc    540

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caagagcaag gagcataatg actgcaggaa ttcgatatca agcttatcgg ggtggcatcc    660

ctgtgacccc tccccagtgc ctctcctggc cctggaagtt gccactccag tgcccaccag    720

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tcagctcact caaaggcggt aatacggtta tccacagaat caggggataa cgcaggaaag   1020

aacatgtgag caaaaggcca gcaaaaggcc aggaaccgta aaaaggccgc gttgctggcg   1080

tttttccata ggctccgccc ccctgacgag catcacaaaa atcgacgctc aagtcagagg   1140

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aactatcgtc ttgagtccaa cccggtaaga cacgacttat cgccactggc agcagccact   1440

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cctaactacg gctacactag aagaacagta tttggtatct gcgctctgct gaagccagtt   1560

accttcggaa aaagagttgg tagctcttga tccggcaaac aaaccaccgc tggtagcggt   1620

ggtttttttg tttgcaagca gcagattacg cgcagaaaaa aaggatctca agaagatcct   1680

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agcggtccgc cacacccagc cggccacagt cgatgaatcc agaaaagcgg ccattttcca   1920

ccatgatatt cggcaagcag gcatcgccat gagtcacgac gagatcctcg ccgtcgggca   1980

tgcgcgcctt gagcctggcg aacagttcgg ctggcgcgag cccctgatgc tcttcgtcca   2040

gatcatcctg atcgacaaga ccggcttcca tccgagtacg tgctcgctcg atgcgatgtt   2100

tcgcttggtg gtcgaatggg caggtagccg gatcaagcgt atgcagccgc cgcattgcat   2160
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gatcgtgtaa tacgactcac tatagggcga attggagct                           2739


<210>   3
<211>   795
<212>   DNA
<213>   artificial sequence

<220>
<223>   Coding sequence having an antibiotic resistance gene Kanamycin.

<400>   3
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gcgcaggggc gcccggttct ttttgtcaag accgacctgt ccggtgccct gaatgaactg     180

caggacgagg cagcgcggct atcgtggctg gccacgacgg gcgttccttg cgcagctgtg     240

ctcgacgttg tcactgaagc gggaagggac tggctgctat tgggcgaagt gccggggcag     300

gatctcctgt catctcacct tgctcctgcc gagaaagtat ccatcatggc tgatgcaatg     360

cggcggctgc atacgcttga tccggctacc tgcccattcg accaccaagc gaaacatcgc     420

atcgagcgag cacgtactcg gatggaagcc ggtcttgtcg atcaggatga tctggacgaa     480

gagcatcagg ggctcgcgcc agccgaactg ttcgccaggc tcaaggcgcg catgcccgac     540

ggcgaggatc tcgtcgtgac tcatggcgat gcctgcttgc cgaatatcat ggtggaaaat     600

ggccgctttt ctggattcat cgactgtggc cggctgggtg tggcggaccg ctatcaggac      660

atagcgttgg ctacccgtga tattgctgaa gagcttggcg gcgaatgggc tgaccgcttc     720
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ctcgtgcttt acggtatcgc cgctcccgat tcgcagcgca tcgccttcta tcgccttctt      780

gacgagttct tctga                                                          795


<210>  4
<211>  219
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog porcine GHRH sequence.

<400>  4
atggtgctct gggtgttctt ctttgtgatc ctcaccctca gcaacagctc ccactgctcc       60

ccacctcccc ctttgaccct caggatgcgg cggcacgtag atgccatctt caccaacagc      120

taccggaagg tgctggccca gctgtccgcc cgcaagctgc tccaggacat cctgaacagg      180

cagcagggag agaggaacca agagcaagga gcataatga                            219


<210>  5
<211>  246
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog mouse GHRH sequence.

<400>  5
gccatggtgc tctgggtgct ctttgtgatc ctcatcctca ccagcggcag ccactgcagc       60

ctgcctccca gccctccctt caggatgcag aggcacgtgg acgccatctt caccaccaac      120

tacaggaagc tgctgagcca gctgtacgcc aggaaggtga tccaggacat catgaacaag      180

cagggcgaga ggatccagga gcagagggcc aggctgagct gataagcttg cgatgagttc      240

ttctaa                                                                   246


<210>  6
<211>  234
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog porcine GHRH sequence.

<400>  6
gccatggccc tgtgggtgtt cttcgtgctg ctgaccctga ccagcggaag ccactgcagc       60

ctgcctccca gccctccctt cagggtgcgc cggcacgccg acgccatctt caccagcagc      120
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tacaggagga tcctgggcca gctgtacgct aggaagctcc tgcacgagat catgaacagg      180

cagcagggcg agaggaacca ggagcagagg agcaggttca actgataagc ttgc            234


<210>  7
<211>  225
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog bovine GHRH sequence.

<400>  7
gccatggtgc tgtgggtgtt cttcctggtg accctgaccc tgagcagcgg ctcccacggc       60

tccctgccct cccagcctct gcgcatccct cgctacgccg acgccatctt caccaacagc      120

taccgcaagg tgctcggcca gctcagcgcc cgcaagctcc tgcaggacat catgaaccgg      180

cagcagggcg agcgcaacca ggagcaggga gcctgataag cttgc                      225


<210>  8
<211>  225
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog ovine GHRH sequence.

<400>  8
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agcctgccca gccagcccct gaggatccct aggtacgccg acgccatctt caccaacagc      120

tacaggaaga tcctgggcca gctgagcgct aggaagctcc tgcaggacat catgaacagg      180

cagcagggcg agaggaacca ggagcagggc gcctgataag cttgc                      225


<210>  9
<211>  246
<212>  DNA
<213>  artificial sequence

<220>
<223>  Sequence for an analog chicken GHRH sequence.

<400>  9
gccatggtgc tctgggtgct ctttgtgatc ctcatcctca ccagcggcag ccactgcagc       60

ctgcctccca gcctcccctt caggatgcag aggcacgtgg acgccatctt caccaccaac      120
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tacaggaagc tgctgagcca gctgtacgcc aggaaggtga tccaggacat catgaacaag    180

cagggcgaga ggatccagga gcagagggcc aggctgagct gataagcttg cgatgagttc    240

ttctaa                                                               246


<210>  10
<211>  190
<212>  DNA
<213>  artificial sequence

<220>
<223>  Nucleic acid sequence of  human growth hormone poly A tail.

<400>  10
gggtggcatc cctgtgaccc ctccccagtg cctctcctgg ccctggaagt tgccactcca     60

gtgcccacca gccttgtcct aataaaatta agttgcatca ttttgtctga ctaggtgtcc    120

ttctataata ttatggggtg gaggggggtg gtatggagca aggggcaagt tgggaagaca    180

acctgtaggg                                                           190


<210>  11
<211>  55
<212>  DNA
<213>  artificial sequence

<220>
<223>  Nucleic acid sequence of human growth hormone 5' untranslated reg
       ion

<400>  11
caaggcccaa ctccccgaac cactcagggt cctgtggaca gctcacctag ctgcc          55


<210>  12
<211>  782
<212>  DNA
<213>  artificial sequence

<220>
<223>  Nucleic acid sequence of a plasmid pUC-18 origin of replicaiton

<400>  12
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tcagctcact caaaggcggt aatacggtta tccacagaat caggggataa cgcaggaaag    120

aacatgtgag caaaaggcca gcaaaaggcc aggaaccgta aaaaggccgc gttgctggcg    180

tttttccata ggctccgccc ccctgacgag catcacaaaa atcgacgctc aagtcagagg    240
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tggcgaaacc cgacaggact ataaagatac caggcgtttc cccctggaag ctccctcgtg    300

cgctctcctg ttccgaccct gccgcttacc ggatacctgt ccgcctttct ccttcgggaa    360

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tccaagctgg gctgtgtgca cgaaccccccc gttcagcccg accgctgcgc cttatccggt   480

aactatcgtc ttgagtccaa cccggtaaga cacgacttat cgccactggc agcagccact    540

ggtaacagga ttagcagagc gaggtatgta ggcggtgcta cagagttctt gaagtggtgg    600

cctaactacg gctacactag aaggacagta tttggtatct gcgctctgct gaagccagtt    660

accttcggaa aaagagttgg tagctcttga tccggcaaac aaaccaccgc tggtagcggt    720

ggtttttttg tttgcaagca gcagattacg cgcagaaaaa aaggatctca agaagatcct    780

tt                                                                   782
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<210> 13
<211> 5
<212> DNA
<213> artificial sequence

<220>
<223> This is a NEO ribosomal binding site

<400> 13
tcctc   5

<210> 14
<211> 29
<212> DNA
<213> artificial sequence

<220>
<223> Nucleic acid sequence of a prokaryotic PNEO promoter.

<400> 14
accttaccag agggcgcccc agctggcaa   29

<210> 15
<211> 323
<212> DNA
<213> artificial sequence

<220>
<223> Nucleic acid sequence of a eukaryotic promoter c5-12.

<400> 15
cggccgtccg ccctcggcac catcctcacg acacccaaat atggcgacgg gtgaggaatg   60

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gtggggagtt attttttagag cggtgaggaa ggtgggcagg cagcaggtgt tggcgctcta   120

aaaataactc ccgggagtta tttttagagc ggaggaatgg tggacaccca aatatggcga   180

cggttcctca cccgtcgcca tatttgggtg tccgccctcg gccggggccg cattcctggg   240

ggccgggcgg tgctcccgcc cgcctcgata aaaggctccg gggccggcgg cggcccacga   300

gctacccgga ggagcgggag gcg   323

<210> 16
<211> 210
<212> DNA
<213> artificial sequence

<220>
<223> Optimized nucleic acid sequence of a human growth hormone poly A
       tail

<400> 16
ttatcggggt ggcatccctg tgacccctcc ccagtgcctc tcctggccct ggaagttgcc   60

actccagtgc ccaccagcct tgtcctaata aaattaagtt gcatcatttt gtctgactag   120

gtgtccttct ataatattat ggggtggagg ggggtggtat ggagcaaggg gcaagttggg   180

aagacaacct gtagggctcg agggggggcc   210

<210> 17
<211> 2722
<212> DNA
<213> artificial sequence

<220>
<223> Plasmid vector having a codon optimized mouse GHRH sequence

<400> 17
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gggtgaggaa tggtggggag ttatttttag agcggtgagg aaggtgggca ggcagcaggt   120

gttggcgctc taaaaataac tcccgggagt tattttttaga gcggaggaat ggtggacacc   180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc   240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc   300

ggcggcccac gagctacccg gaggagcggg aggcgccaag cggatcccaa ggcccaactc   360

cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggtgct ctgggtgctc   420

tttgtgatcc tcatcctcac cagcggcagc cactgcagcc tgcctcccag ccctcccttc   480
```

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aggatgcaga ggcacgtgga cgccatcttc accaccaact acaggaagct gctgagccag        540

ctgtacgcca ggaaggtgat ccaggacatc atgaacaagc agggcgagag gatccaggag        600

cagagggcca ggctgagctg ataagcttat cggggtggca tccctgtgac ccctccccag        660

tgcctctcct ggccctggaa gttgccactc cagtgcccac cagccttgtc ctaataaaat        720

taagttgcat cattttgtct gactaggtgt ccttctataa tattatgggg tggaggggggg       780

tggtatggag caaggggcaa gttgggaaga caacctgtag ggctcgaggg ggggcccggt        840

accagctttt gttcccttta gtgagggtta atttcgagct tggtcttccg cttcctcgct        900

cactgactcg ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc actcaaaggc        960

ggtaatacgg ttatccacag aatcaggggga taacgcagga aagaacatgt gagcaaaagg       1020

ccagcaaaag gccaggaacc gtaaaaaggc cgcgttgctg gcgtttttcc ataggctccg       1080

cccccctgac gagcatcaca aaaatcgacg ctcaagtcag aggtggcgaa acccgacagg       1140

actataaaga taccaggcgt ttccccctgg aagctccctc gtgcgctctc ctgttccgac       1200

cctgccgctt accggatacc tgtccgcctt tctcccttcg ggaagcgtgg cgctttctca       1260

tagctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc tgggctgtgt       1320

gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc gtcttgagtc       1380

caacccggta agacacgact tatcgccact ggcagcagcc actggtaaca ggattagcag       1440

agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact acggctacac       1500

tagaagaaca gtatttggta tctgcgctct gctgaagcca gttaccttcg gaaaaagagt       1560

tggtagctct tgatccggca aacaaaccac cgctggtagc ggtggttttt ttgtttgcaa       1620

gcagcagatt acgcgcagaa aaaaaggatc tcaagaagat cctttgatct tttctacggg       1680

gtctgacgct cagctagcgc tcagaagaac tcgtcaagaa ggcgatagaa ggcgatgcgc       1740

tgcgaatcgg gagcggcgat accgtaaagc acgaggaagc ggtcagccca ttcgccgcca       1800

agctcttcag caatatcacg ggtagccaac gctatgtcct gatagcggtc cgccacaccc       1860

agccggccac agtcgatgaa tccagaaaag cggccatttt ccaccatgat attcggcaag       1920

caggcatcgc catgagtcac gacgagatcc tcgccgtcgg gcatgcgcgc cttgagcctg       1980

gcgaacagtt cggctggcgc gagcccctga tgctcttcgt ccagatcatc ctgatcgaca       2040

agaccggctt ccatccgagt acgtgctcgc tcgatgcgat gtttcgcttg gtggtcgaat       2100
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gggcaggtag ccggatcaag cgtatgcagc cgccgcattg catcagccat gatggatact   2160

ttctcggcag gagcaaggtg agatgacagg agatcctgcc ccggcacttc gcccaatagc   2220

agccagtccc ttcccgcttc agtgacaacg tcgagcacag ctgcgcaagg aacgcccgtc   2280

gtggccagcc acgatagccg cgctgcctcg tcctgcagtt cattcagggc accggacagg   2340

tcggtcttga caaaaagaac cgggcgcccc tgcgctgaca gccggaacac ggcggcatca   2400

gagcagccga ttgtctgttg tgcccagtca tagccgaata gcctctccac ccaagcggcc   2460

ggagaacctg cgtgcaatcc atcttgttca atcatgcgaa acgatcctca tcctgtctct   2520

tgatcagatc ttgatcccct gcgccatcag atccttggcg gcaagaaagc catccagttt   2580

actttgcagg gcttcccaac cttaccagag ggcgccccag ctggcaattc cggttcgctt   2640

gctgtccata aaaccgccca gtctagcaac tgttgggaag ggcgatcgtg taatacgact   2700

cactataggg cgaattggag ct                                           2722
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<210>  18
<211>  2725
<212>  DNA
<213>  artificial sequence

<220>
<223>  Plasmid vector having a codon optimized rat GHRH sequence

<400>  18
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gggtgaggaa tggtgggag ttatttttag agcggtgagg aaggtgggca ggcagcaggt    120

gttggcgctc taaaaataac tcccgggagt tatttttaga gcggaggaat ggtggacacc    180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc    240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc    300

ggcggcccac gagctacccg gaggagcggg aggcgccaag cggatcccaa ggcccaactc    360

cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggccct gtgggtgttc    420

ttcgtgctgc tgaccctgac cagcggaagc cactgcagcc tgcctcccag ccctcccttc    480

agggtgcgcc ggcacgccga cgccatcttc accagcagct acaggaggat cctgggccag    540

ctgtacgcta ggaagctcct gcacgagatc atgaacaggc agcagggcga gaggaaccag    600

gagcagagga gcaggttcaa ctgataagct tatcggggtg catccctgt gacccctccc    660

cagtgcctct cctggccctg gaagttgcca ctccagtgcc caccagcctt gtcctaataa    720
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aattaagttg catcattttg tctgactagg tgtccttcta taatattatg gggtggaggg     780

gggtggtatg gagcaagggg caagttggga agacaacctg tagggctcga gggggggccc     840

ggtaccagct tttgttccct ttagtgaggg ttaatttcga gcttggtctt ccgcttcctc     900

gctcactgac tcgctgcgct cggtcgttcg gctgcggcga gcggtatcag ctcactcaaa     960

ggcggtaata cggttatcca cagaatcagg ggataacgca ggaaagaaca tgtgagcaaa    1020

aggccagcaa aaggccagga accgtaaaaa ggccgcgttg ctggcgtttt tccataggct    1080

ccgcccccct gacgagcatc acaaaaatcg acgctcaagt cagaggtggc gaaacccgac    1140

aggactataa agataccagg cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc    1200

gaccctgccg cttaccggat acctgtccgc ctttctccct tcgggaagcg tggcgctttc    1260

tcatagctca cgctgtaggt atctcagttc ggtgtaggtc gttcgctcca gctgggctg     1320

tgtgcacgaa ccccccgttc agcccgaccg ctgcgcctta tccggtaact atcgtcttga    1380

gtccaacccg gtaagacacg acttatcgcc actggcagca gccactggta acaggattag    1440

cagagcgagg tatgtaggcg gtgctacaga gttcttgaag tggtggccta actacggcta    1500

cactagaaga acagtatttg gtatctgcgc tctgctgaag ccagttacct tcggaaaaag    1560

agttggtagc tcttgatccg gcaaacaaac caccgctggt agcggtggtt tttttgtttg    1620

caagcagcag attacgcgca gaaaaaaagg atctcaagaa gatcctttga tctttctac     1680

ggggtctgac gctcagctag cgctcagaag aactcgtcaa gaaggcgata gaaggcgatg    1740

cgctgcgaat cgggagcggc gataccgtaa agcacgagga agcggtcagc ccattcgccg    1800

ccaagctctt cagcaatatc acgggtagcc aacgctatgt cctgatagcg gtccgccaca    1860

cccagccggc cacagtcgat gaatccagaa aagcggccat tttccaccat gatattcggc    1920

aagcaggcat cgccatgagt cacgacgaga tcctcgccgt cgggcatgcg cgccttgagc    1980

ctggcgaaca gttcggctgg cgcgagcccc tgatgctctt cgtccagatc atcctgatcg    2040

acaagaccgg cttccatccg agtacgtgct cgctcgatgc gatgtttcgc ttggtggtcg    2100

aatgggcagg tagccggatc aagcgtatgc agccgccgca ttgcatcagc catgatggat    2160

actttctcgg caggagcaag gtgagatgac aggagatcct gccccggcac ttcgcccaat    2220

agcagccagt cccttcccgc ttcagtgaca acgtcgagca cagctgcgca aggaacgccc    2280

gtcgtggcca gccacgatag ccgcgctgcc tcgtcctgca gttcattcag ggcaccggac    2340
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aggtcggtct tgacaaaaag aaccgggcgc ccctgcgctg acagccggaa cacggcggca    2400

tcagagcagc cgattgtctg ttgtgcccag tcatagccga atagcctctc cacccaagcg    2460

gccggagaac ctgcgtgcaa tccatcttgt tcaatcatgc gaaacgatcc tcatcctgtc    2520

tcttgatcag atcttgatcc cctgcgccat cagatccttg gcggcaagaa agccatccag    2580

tttactttgc agggcttccc aaccttacca gagggcgccc cagctggcaa ttccggttcg    2640

cttgctgtcc ataaaaccgc ccagtctagc aactgttggg aagggcgatc gtgtaatacg    2700

actcactata gggcgaattg gagct                                          2725


<210>   19
<211>   2716
<212>   DNA
<213>   artificial sequence

<220>
<223>   Plasmid vector having a codon optimized bovine GHRH sequence

<400>   19
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gggtgaggaa tggtgggggag ttatttttag agcggtgagg aaggtgggca ggcagcaggt    120

gttggcgctc taaaaataac tcccgggagt tattttaga gcggaggaat ggtggacacc     180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc    240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc    300

ggcggcccac gagctacccg gaggagcggg aggcgccaag cggatcccaa ggcccaactc    360

cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggtgct gtgggtgttc    420

ttcctggtga ccctgaccct gagcagcggc tcccacggct ccctgccctc ccagcctctg    480

cgcatccctc gctacgccga cgccatcttc accaacagct accgcaaggt gctcggccag    540

ctcagcgccc gcaagctcct gcaggacatc atgaaccggc agcagggcga gcgcaaccag    600

gagcagggag cctgataagc ttatcggggt ggcatccctg tgacccctcc ccagtgcctc    660

tcctggccct ggaagttgcc actccagtgc ccaccagcct tgtcctaata aaattaagtt    720

gcatcatttt gtctgactag gtgtccttct ataatattat ggggtggagg ggggtggtat    780

ggagcaaggg gcaagttggg aagacaacct gtagggctcg aggggggggcc cggtaccagc    840

ttttgttccc tttagtgagg gttaatttcg agcttggtct tccgcttcct cgctcactga    900

ctcgctgcgc tcggtcgttc ggctgcggcg agcggtatca gctcactcaa aggcggtaat    960
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acggttatcc acagaatcag gggataacgc aggaaagaac atgtgagcaa aaggccagca    1020

aaaggccagg aaccgtaaaa aggccgcgtt gctggcgttt ttccataggc tccgcccccc    1080

tgacgagcat cacaaaaatc gacgctcaag tcagaggtgg cgaaacccga caggactata    1140

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gcttaccgga tacctgtccg cctttctccc ttcgggaagc gtggcgcttt ctcatagctc    1260

acgctgtagg tatctcagtt cggtgtaggt cgttcgctcc aagctgggct gtgtgcacga    1320

acccccccgtt cagcccgacc gctgcgcctt atccggtaac tatcgtcttg agtccaaccc    1380

ggtaagacac gacttatcgc cactggcagc agccactggt aacaggatta gcagagcgag    1440

gtatgtaggc ggtgctacag agttcttgaa gtggtggcct aactacggct acactagaag    1500

aacagtattt ggtatctgcg ctctgctgaa gccagttacc ttcggaaaaa gagttggtag    1560

ctcttgatcc ggcaaacaaa ccaccgctgg tagcggtggt ttttttgttt gcaagcagca    1620

gattacgcgc agaaaaaaag gatctcaaga agatcctttg atctttтcta cggggtctga    1680

cgctcagcta gcgctcagaa gaactcgtca agaaggcgat agaaggcgat gcgctgcgaa    1740

tcgggagcgg cgataccgta aagcacgagg aagcggtcag cccattcgcc gccaagctct    1800

tcagcaatat cacgggtagc caacgctatg tcctgatagc ggtccgccac acccagccgg    1860

ccacagtcga tgaatccaga aaagcggcca ttttccacca tgatattcgg caagcaggca    1920

tcgccatgag tcacgacgag atcctcgccg tcgggcatgc gcgccttgag cctggcgaac    1980

agttcggctg gcgcgagccc ctgatgctct tcgtccagat catcctgatc gacaagaccg    2040

gcttccatcc gagtacgtgc tcgctcgatg cgatgtttcg cttggtggtc gaatgggcag    2100

gtagccggat caagcgtatg cagccgccgc attgcatcag ccatgatgga tactttctcg    2160

gcaggagcaa ggtgagatga caggagatcc tgccccggca cttcgcccaa tagcagccag    2220

tcccttcccg cttcagtgac aacgtcgagc acagctgcgc aaggaacgcc cgtcgtggcc    2280

agccacgata gccgcgctgc ctcgtcctgc agttcattca gggcaccgga caggtcggtc    2340

ttgacaaaaa gaaccgggcg cccctgcgct gacagccgga acacggcggc atcagagcag    2400

ccgattgtct gttgtgccca gtcatagccg aatagcctct ccacccaagc ggccggagaa    2460

cctgcgtgca atccatcttg ttcaatcatg cgaaacgatc ctcatcctgt ctcttgatca    2520

gatcttgatc ccctgcgcca tcagatcctt ggcggcaaga aagccatcca gtttactttg    2580
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cagggcttcc caaccttacc agagggcgcc ccagctggca attccggttc gcttgctgtc   2640

cataaaaccg cccagtctag caactgttgg gaagggcgat cgtgtaatac gactcactat   2700

agggcgaatt ggagct   2716

<210>   20
<211>   2716
<212>   DNA
<213>   artificial sequence

<220>
<223>   Plasmid vector having a codon optimized ovine GHRH sequence

<400>   20
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gggtgaggaa tggtgggggag ttatttttag agcggtgagg aaggtgggca ggcagcaggt   120

gttggcgctc taaaaataac tcccgggagt tattttaga gcggaggaat ggtggacacc   180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc   240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc   300

ggcggcccac gagctacccg gaggagcggg aggcgccaag cggatcccaa ggcccaactc   360

cccgaaccac tcagggtcct gtggacagct cacctagctg ccatggtgct gtgggtgttc   420

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aggatcccta ggtacgccga cgccatcttc accaacagct acaggaagat cctgggccag   540

ctgagcgcta ggaagctcct gcaggacatc atgaacaggc agcagggcga gaggaaccag   600

gagcagggcg cctgataagc ttatcggggt ggcatccctg tgacccctcc ccagtgcctc   660

tcctggccct ggaagttgcc actccagtgc ccaccagcct tgtcctaata aaattaagtt   720

gcatcatttt gtctgactag gtgtccttct ataatattat ggggtggagg ggggtggtat   780

ggagcaaggg gcaagttggg aagacaacct gtagggctcg aggggggggcc cggtaccagc   840

ttttgttccc tttagtgagg gttaatttcg agcttggtct ccgcttcct cgctcactga   900

ctcgctgcgc tcggtcgttc ggctgcggcg agcggtatca gctcactcaa aggcggtaat   960

acggttatcc acagaatcag gggataacgc aggaaagaac atgtgagcaa aaggccagca   1020

aaaggccagg aaccgtaaaa aggccgcgtt gctggcgttt ttccataggc tccgcccccc   1080

tgacgagcat cacaaaaatc gacgctcaag tcagaggtgg cgaaacccga caggactata   1140

aagataccag gcgtttcccc ctggaagctc cctcgtgcgc tctcctgttc cgaccctgcc   1200

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gcttaccgga tacctgtccg cctttctccc ttcgggaagc gtggcgcttt ctcatagctc   1260

acgctgtagg tatctcagtt cggtgtaggt cgttcgctcc aagctgggct gtgtgcacga   1320

accccccgtt cagcccgacc gctgcgcctt atccggtaac tatcgtcttg agtccaaccc   1380

ggtaagacac gacttatcgc cactggcagc agccactggt aacaggatta gcagagcgag   1440

gtatgtaggc ggtgctacag agttcttgaa gtggtggcct aactacggct acactagaag   1500

aacagtattt ggtatctgcg ctctgctgaa gccagttacc ttcggaaaaa gagttggtag   1560

ctcttgatcc ggcaaacaaa ccaccgctgg tagcggtggt ttttttgttt gcaagcagca   1620

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cgctcagcta gcgctcagaa gaactcgtca agaaggcgat agaaggcgat gcgctgcgaa   1740

tcgggagcgg cgataccgta aagcacgagg aagcggtcag cccattcgcc gccaagctct   1800

tcagcaatat cacgggtagc caacgctatg tcctgatagc ggtccgccac acccagccgg   1860

ccacagtcga tgaatccaga aaagcggcca ttttccacca tgatattcgg caagcaggca   1920

tcgccatgag tcacgacgag atcctcgccg tcgggcatgc gcgccttgag cctggcgaac   1980

agttcggctg gcgcgagccc ctgatgctct tcgtccagat catcctgatc gacaagaccg   2040

gcttccatcc gagtacgtgc tcgctcgatg cgatgtttcg cttggtggtc gaatgggcag   2100

gtagccggat caagcgtatg cagccgccgc attgcatcag ccatgatgga tactttctcg   2160

gcaggagcaa ggtgagatga caggagatcc tgccccggca cttcgcccaa tagcagccag   2220

tcccttcccg cttcagtgac aacgtcgagc acagctgcgc aaggaacgcc cgtcgtggcc   2280

agccacgata gccgcgctgc ctcgtcctgc agttcattca gggcaccgga caggtcggtc   2340

ttgacaaaaa gaaccgggcg cccctgcgct gacagccgga acacggcggc atcagagcag   2400

ccgattgtct gttgtgccca gtcatagccg aatagcctct ccacccaagc ggccggagaa   2460

cctgcgtgca atccatcttg ttcaatcatg cgaaacgatc ctcatcctgt ctcttgatca   2520

gatcttgatc ccctgcgcca tcagatcctt ggcggcaaga aagccatcca gtttactttg   2580

cagggcttcc caaccttacc agagggcgcc ccagctggca attccggttc gcttgctgtc   2640

cataaaaccg cccagtctag caactgttgg gaagggcgat cgtgtaatac gactcactat   2700

agggcgaatt ggagct                                                    2716
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<210>   21
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<211> 2725
<212> DNA
<213> artificial sequence

<220>
<223> Plasmid vector having a codon optimized chicken GHRH sequence

<400> 21
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gggtgaggaa tggtgggggag ttattttttag agcggtgagg aaggtgggca ggcagcaggt     120

gttggcgctc taaaaataac tcccgggagt tattttttaga gcggaggaat ggtggacacc     180

caaatatggc gacggttcct cacccgtcgc catatttggg tgtccgccct cggccggggc     240

cgcattcctg ggggccgggc ggtgctcccg cccgcctcga taaaaggctc cggggccggc     300

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ggcggtaata cggttatcca cagaatcagg ggataacgca ggaaagaaca tgtgagcaaa    1020

aggccagcaa aaggccagga accgtaaaaa ggccgcgttg ctggcgtttt tccataggct    1080

ccgcccccct gacgagcatc acaaaaatcg acgctcaagt cagaggtggc gaaacccgac    1140

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gtccaacccg gtaagacacg acttatcgcc actggcagca gccactggta acaggattag    1440
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agttggtagc  tcttgatccg  gcaaacaaac  caccgctggt  agcggtggtt  tttttgtttg   1620

caagcagcag  attacgcgca  gaaaaaaagg  atctcaagaa  gatcctttga  tcttttctac   1680

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cttgctgtcc  ataaaaccgc  ccagtctagc  aactgttggg  aagggcgatc  gtgtaatacg   2700

actcactata  gggcgaattg  gagct                                           2725
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